Harvard Electricity Policy Group
May 31-June 1, 2012

Chairman Barry T. Smitherman
Railroad Commission of Texas

www.smithermantx.com
According to EIA, the natural gas share of electric power generation increases from 24% in 2010 to 27% in 2035. Projected coal share of overall electricity generation falls from 45% in 2010 to 39% in 2035.

*Source: EIA Annual Energy Outlook 2012*
According to EIA, shale gas production increases from 5 trillion cubic feet in 2010 (23% of total U.S. dry gas production) to 13.6 trillion cubic feet in 2035 (49% of total U.S. dry gas production).
Total electricity generation was down 7% in December 2011 compared to December 2010.

Despite this decline, generation from natural gas rose 12% to 86 terawatthours.

Coal-fired generation, fell by 21% between December 2010 and December 2011, to 132 terawatthours.
• BENTEK analysis shows that at a Henry Hub spot price of $2.33 (hit Feb. 2), some 3.0 Bcf/d of gas could hypothetically replace Powder River Basin (PRB) coal as a generation fuel on a strictly $/MMBtu basis (graph right).

• Natural gas becomes competitive with PRB coal for power when Henry Hub spot prices fall below $3.00/MMBtu.

• At that price, about 500,000 short tons per day of U.S. coal could hypothetically be replaced by natural gas.
God Blessed Texas!
Newark, East (Barnett Shale)
Gas Well Gas Production
1993 through 2011

10.8 TCF Gas
Since 1993!
Texas Eagle Ford Shale
Drilling Permits Issued
2008 through April 2012

Estimated 54% increase in permits issued for 2012!

- 2008: 26
- 2009: 94
- 2010: 1,010
- 2011: 2,826
- January - April 2012: 4,356

Total: 7,307 permits issued from 2008 to April 2012.
## Electric Generation by Fuel Type

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>YTD/Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>42.1%</td>
<td>43.0%</td>
<td>44.2%</td>
<td>51.6%</td>
<td>45.3%</td>
</tr>
<tr>
<td>Coal</td>
<td>33.1%</td>
<td>33.4%</td>
<td>30.2%</td>
<td>24.2%</td>
<td>30.2%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>11.7%</td>
<td>11.8%</td>
<td>11.9%</td>
<td>11.5%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Wind</td>
<td>11.5%</td>
<td>10.6%</td>
<td>13.1%</td>
<td>11.1%</td>
<td>11.6%</td>
</tr>
<tr>
<td>Water</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.2%</td>
</tr>
<tr>
<td>DC Imports</td>
<td>1.1%</td>
<td>0.8%</td>
<td>0.2%</td>
<td>1.3%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
QUESTIONS?

barry@smithermantx.com

www.smithermantx.com